11-14-1997

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Nov. 14, 1997

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ARTICLE BY UM PROFESSOR APPEARS IN PRESTIGIOUS JOURNAL 'NATURE'

MISSOULA--

The Nov. 6 issue of one of the world's most prestigious scientific journals, Nature, features an article by University of Montana biology professor Ken Dial.

Dial's report, "Lifelines: Secrets of Bird Flight Revealed," answers the question of how power requirements of birds vary with flight speed. In experiments conducted at UM, Dial learned that bird flight requires high power output during hovering, but that fast speeds require relatively less power. Previous theories had predicted that birds required high power output for both very low and very fast flight speeds.

The UM study is the first to successfully use strain gauges implanted in the flight musculature of the bird to measure a full range of flight speeds. Black-billed magpies were used by Dial and his colleagues, Dr. Andrew Biewener of the University of Chicago, and UM doctoral students Bret Tobalske and Doug Warrick.

"Our technique is a fairly instant technique -- from wingbeat to wingbeat," Dial said.

The study is important because it is the first to accurately measure the "cost" of different flight speeds to a bird, Dial said.

"Birds do phenomenal things moving from one place to the next, and they do it

efficiently, and we've never been able to measure why before," he said. "We think (the study) is a significant step forward."

Information gleaned from the study could be useful in such areas as the manufacture of airplanes, although that was not the researchers' motivating force, Dial said. But, he noted, "There would be no aircraft industry if it weren't for birds, period."

The Nature report further upholds UM's reputation as one of the world's leading bird research facilities.

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Local, state dailies, weeklies; John Easton, Public Affairs, University of Chicago Medical Center, fax (773) 702-3171.
nature.rl